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Schumacher

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(54) **FOLDING STOCK ATTACHMENT WITH MODIFIED BOLT CARRIER FOR AUTOMATIC RECOIL RIFLES AND PISTOLS**

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(21) Appl. No.: **14/928,208**

(22) Filed: **Oct. 30, 2015**

Related U.S. Application Data

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(51) **Int. Cl.**

F41C 7/00	(2006.01)
F41C 23/04	(2006.01)
F41C 23/10	(2006.01)
F41A 3/12	(2006.01)

(52) **U.S. Cl.**
CPC . ***F41C 23/04*** (2013.01); ***F41A 3/12*** (2013.01); ***F41C 23/10*** (2013.01)

(58) **Field of Classification Search**
CPC F41C 23/04; F41C 23/10; F41C 23/14
See application file for complete search history.

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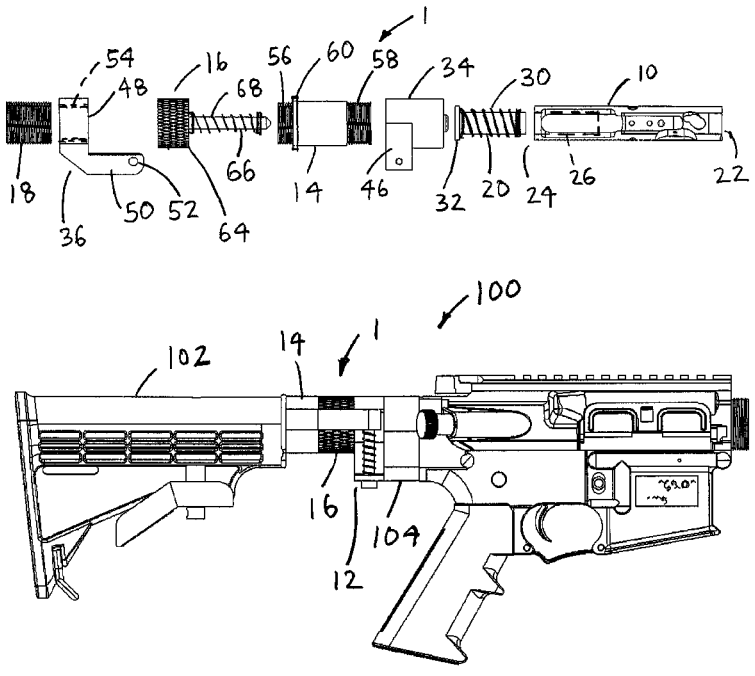
(57) **ABSTRACT**

A modified bolt carrier for automatic recoil rifles and pistols preferably includes a modified bolt carrier, a folding stock member, a shortened buffer tube, an end cap, a butt stock threaded tube and a bolt carrier sleeve. A sleeve bore is formed in the modified carrier bolt to receive the bolt carrier sleeve. The folding stock member includes a swing base and a swing arm. A tube bore is formed through the swing base to receive the shortened buffer tube. Upper and lower flanges extend from the swing base to retain a pivot pin. The swing arm includes a butt pivot arm, which extends from the stock ring. The pivot arm is pivotally retained on the swing base with the pivot pin. The butt stock threaded tube is threaded into the stock ring. The end cap includes an end cap portion and a guide rod.

9 Claims, 7 Drawing Sheets



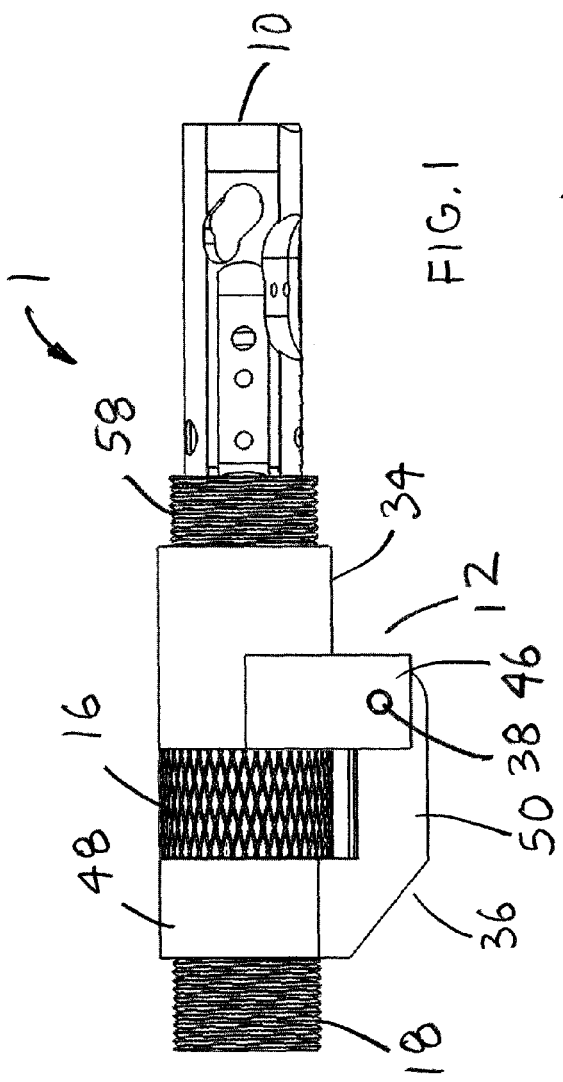


FIG. 1

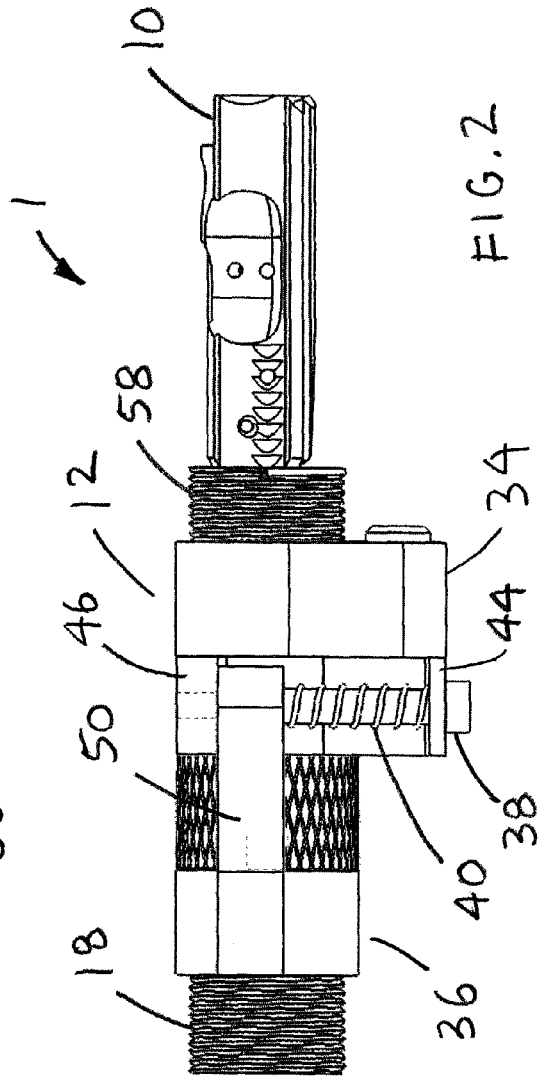


FIG. 2

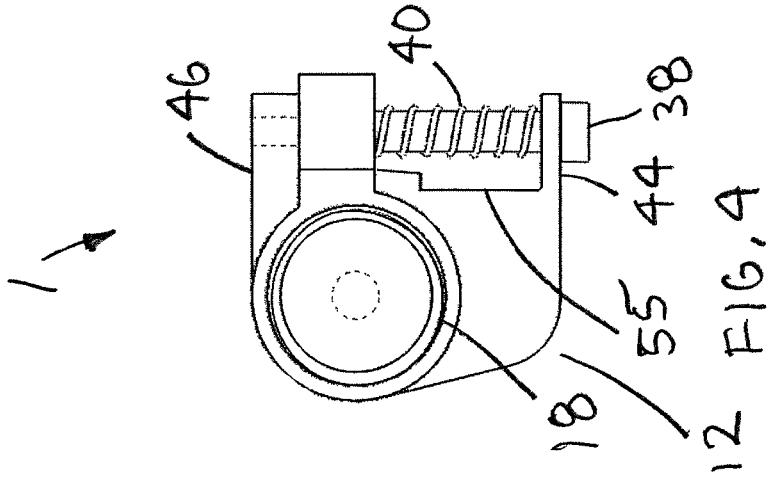


FIG. 4

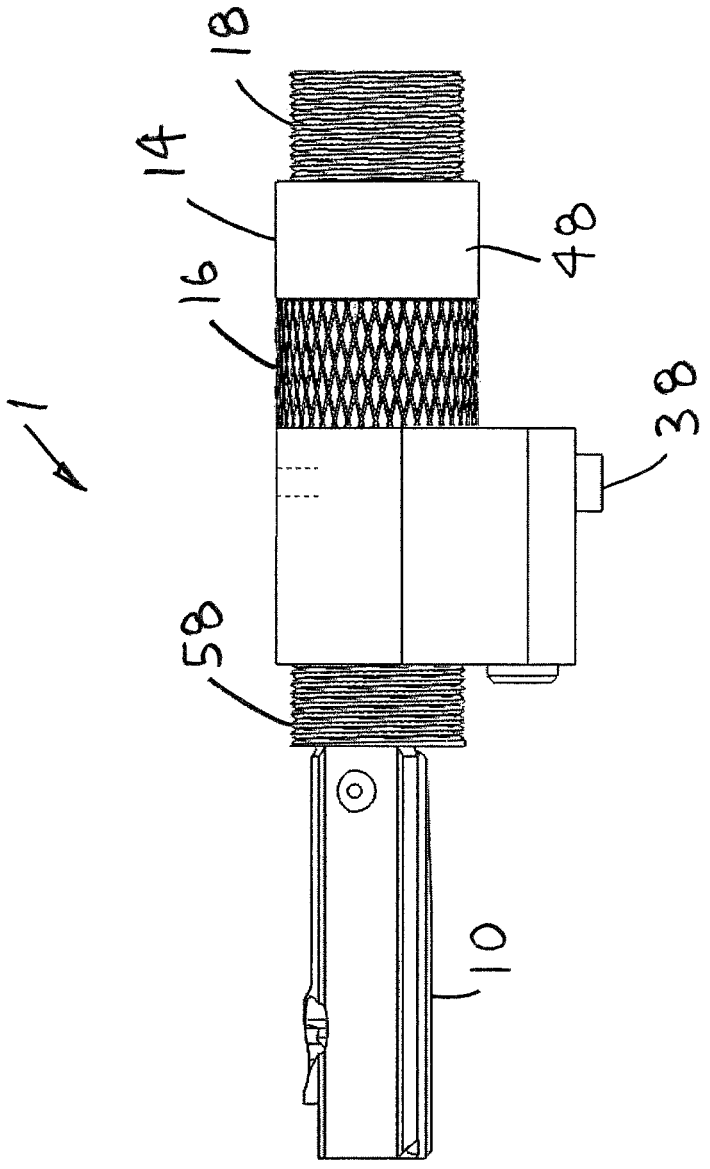


FIG. 3

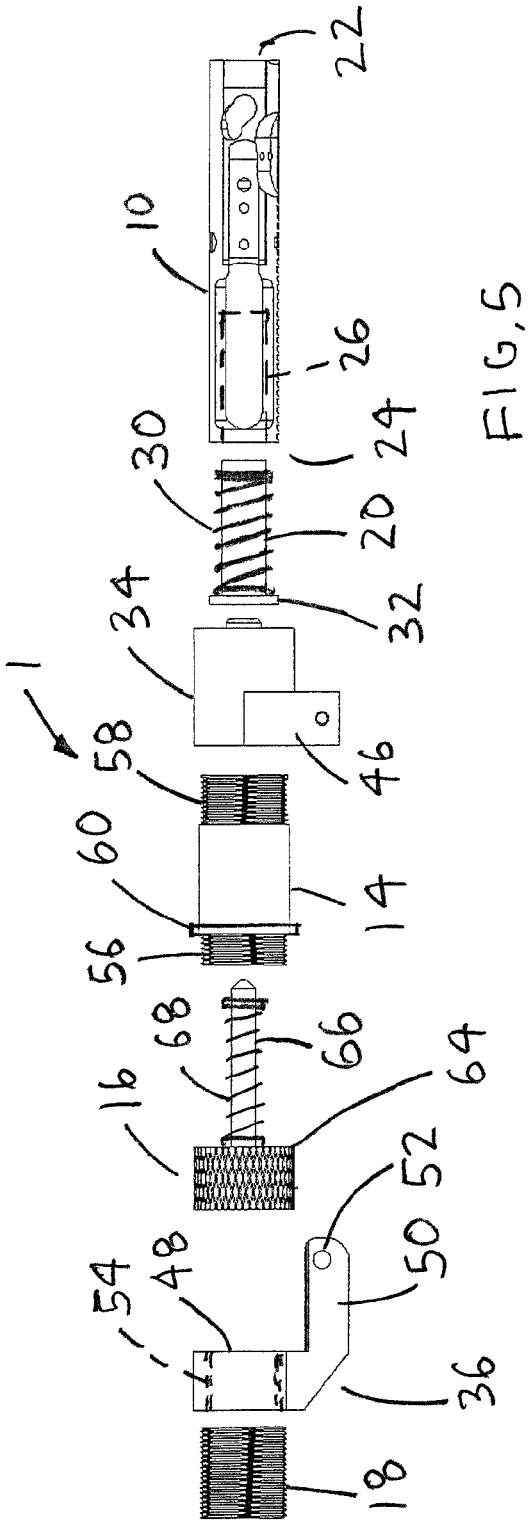

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FIG. 5

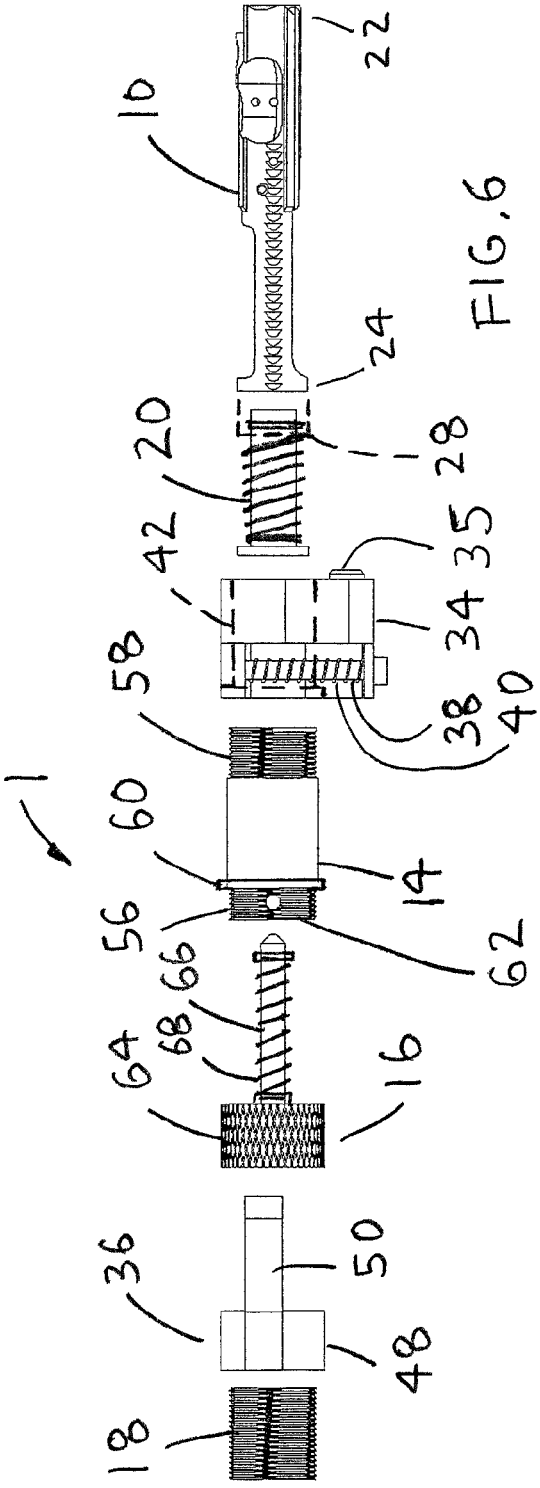
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FIG. 6

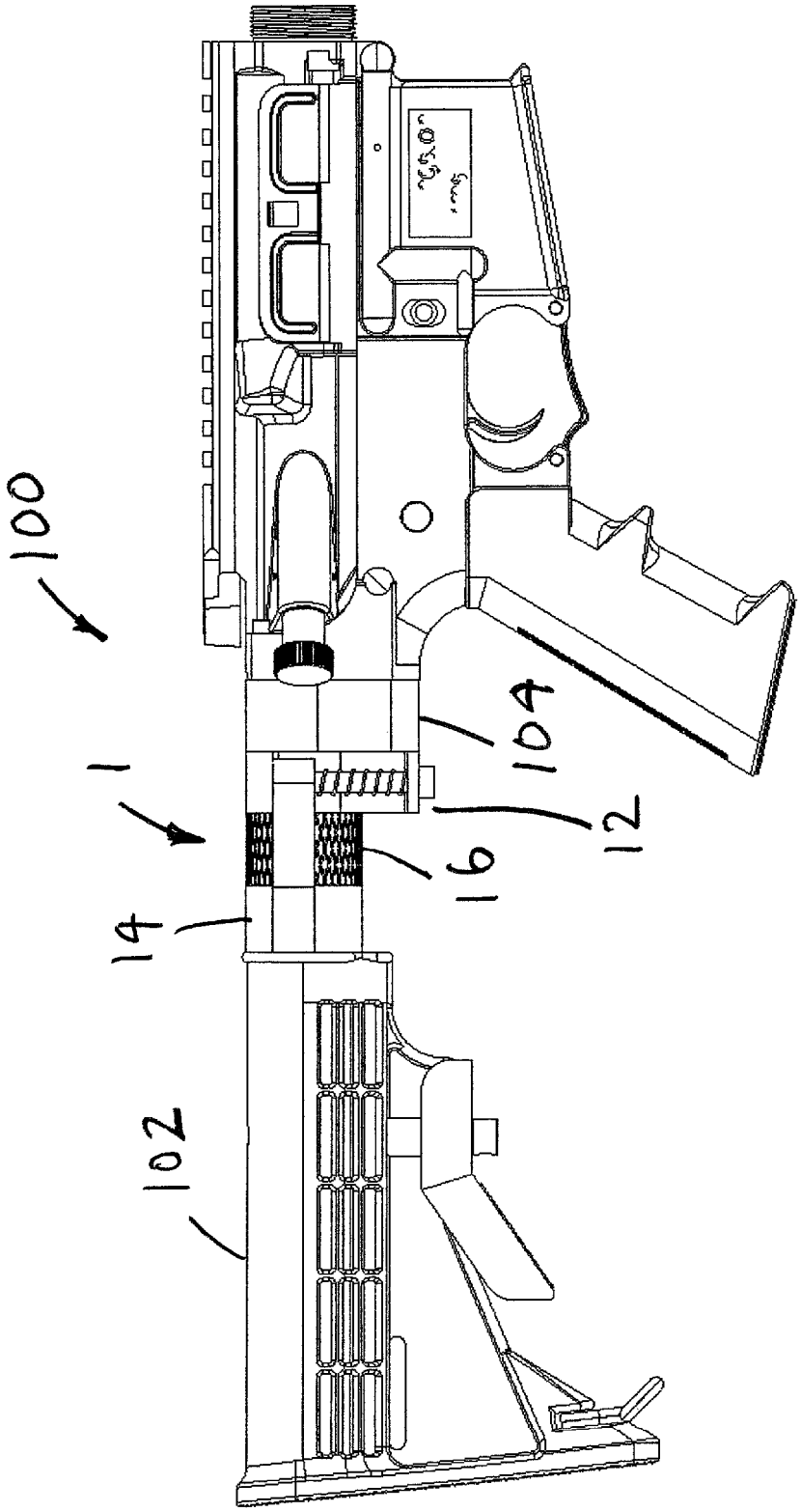
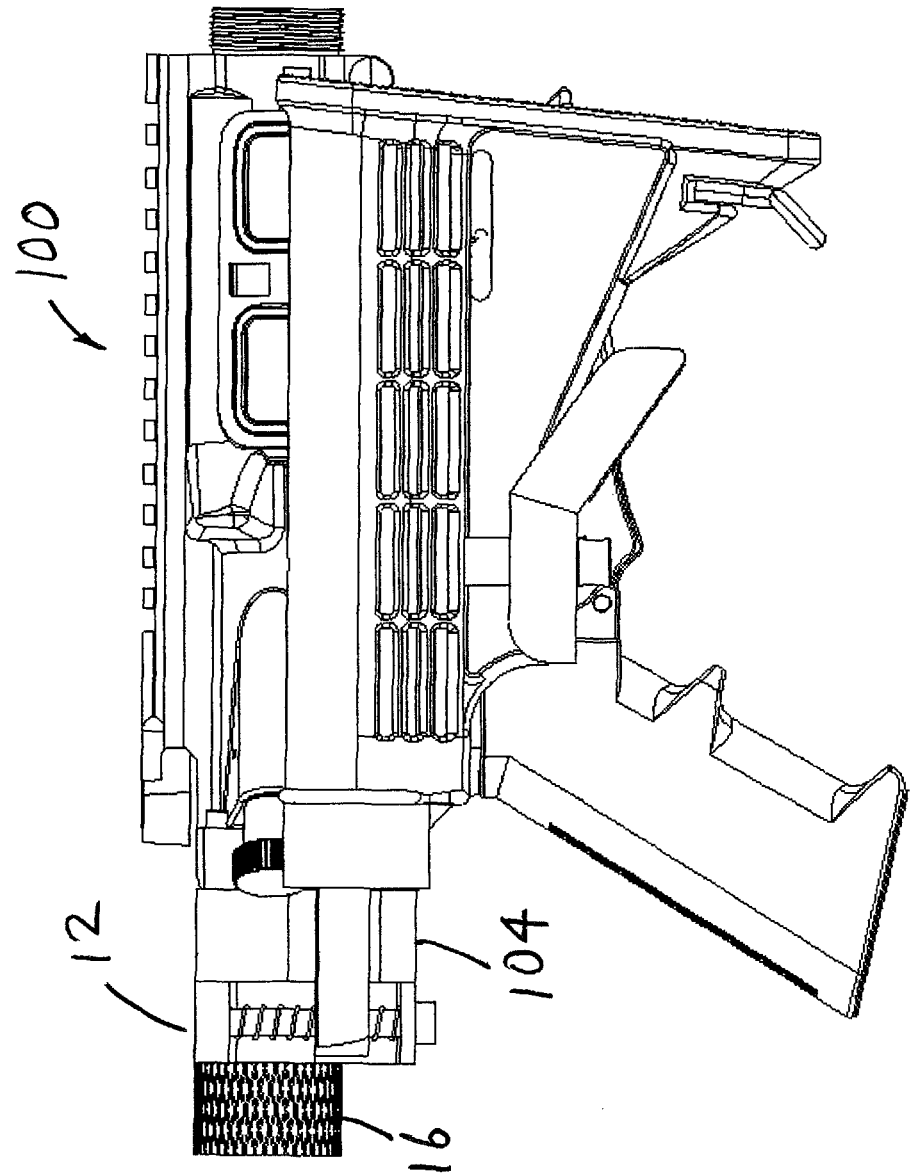


FIG. 7

FIG. 8



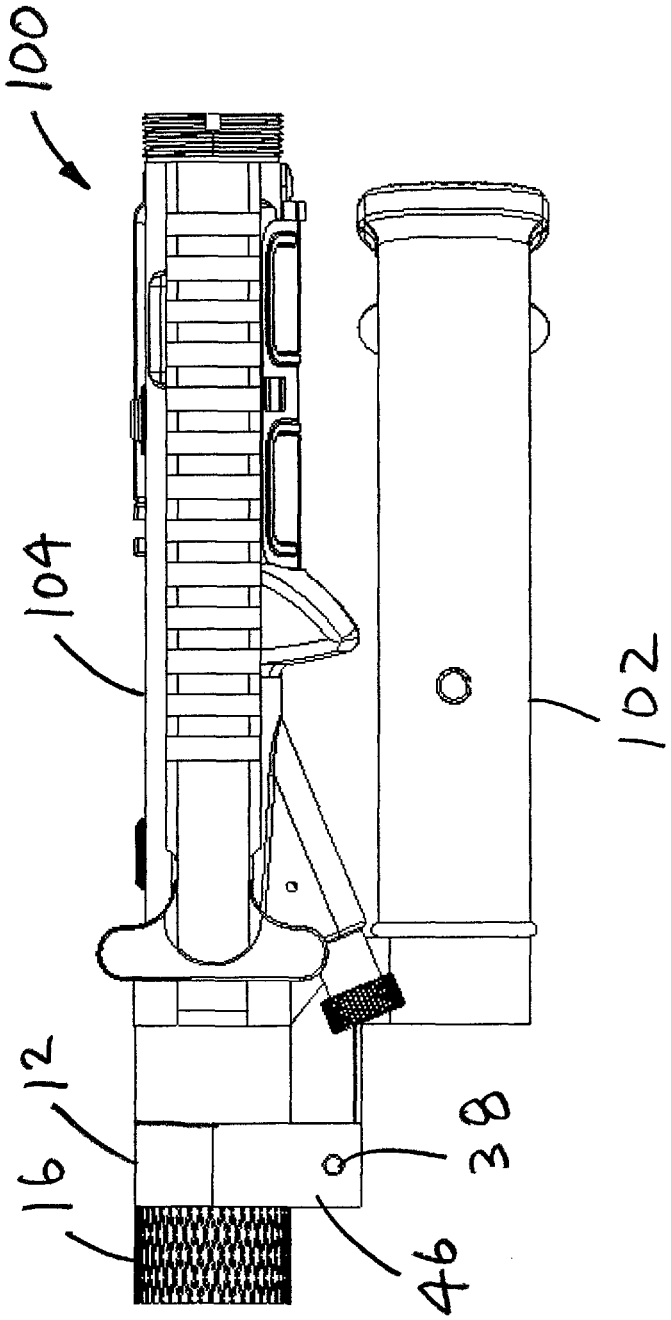


FIG. 9

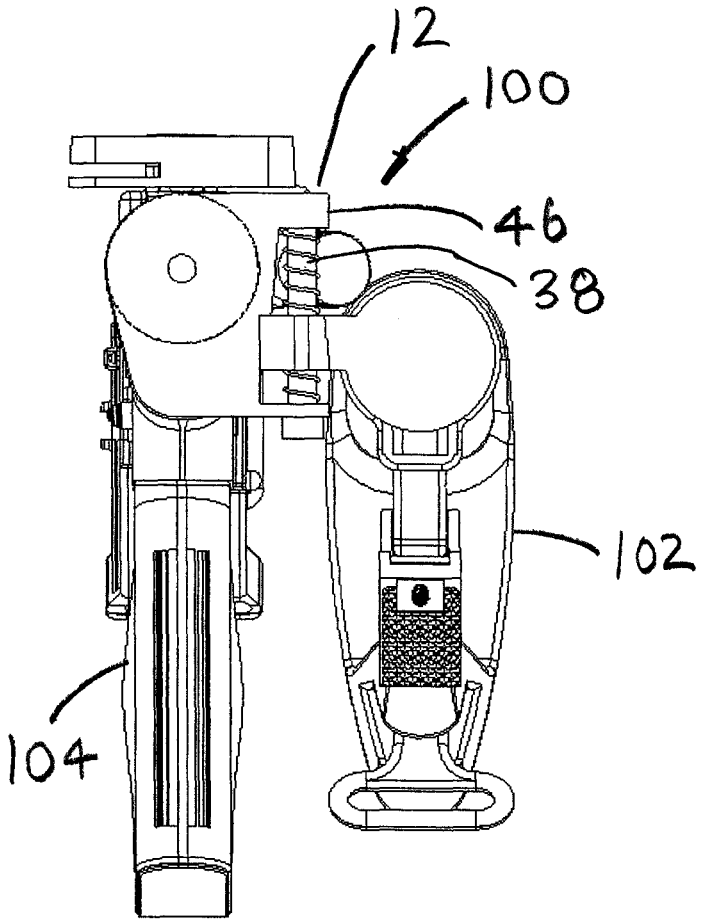


FIG. 10

FOLDING STOCK ATTACHMENT WITH MODIFIED BOLT CARRIER FOR AUTOMATIC RECOIL RIFLES AND PISTOLS

CROSS-REFERENCES TO RELATED APPLICATIONS

This is a non-provisional patent application, which claims the benefit of provisional application No. 62/073,223 filed on Oct. 31, 2014.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates generally to firearms and more specifically to a folding stock attachment with modified bolt carrier for automatic recoil rifles and pistols, which allows a stock to be folded to a right side of the firearm.

2. Discussion of the Prior Art

U.S. Pat. No. 8,631,601 to Langevin et al. discloses an automatic or semiautomatic rifle with folding clamshell buttstock. U.S. Pat. No. 8,769,855 to Law discloses a folding stock adaptor for military-style assault rifles and a method for its use.

Accordingly, there is a clearly felt need in the art for a folding stock attachment with a modified bolt carrier for automatic recoil rifles and pistols, which allows a stock to be folded to a right side of the firearm and which has a shorter length than that of the prior art.

SUMMARY OF THE INVENTION

The present invention provides a folding stock attachment with a modified bolt carrier for automatic recoil rifles and pistols, which has a shorter length than that of the prior art. The folding stock attachment with a modified bolt carrier for automatic recoil rifles and pistols (folding stock attachment) preferably includes a modified bolt carrier, a folding stock member, a shortened buffer tube, an end cap, a butt stock threaded tube and a bolt carrier sleeve. The modified bolt carrier includes a bolt end and a buffer end. A sleeve bore is formed in the buffer end of the modified carrier bolt to receive the bolt carrier sleeve. It is preferable to shorten the buffer end by 5-1 inch, before forming the sleeve bore. A sleeve spring is placed on the bolt carrier sleeve. A sleeve flange is formed on an end of the bolt carrier sleeve to retain the sleeve spring. The folding stock member includes a swing base, a swing arm, a pivot pin and an arm spring. A tube bore is formed through the swing base to receive the shortened buffer tube. A lower base flange extends outward from a bottom of the swing base and an upper base flange extends outward from a top of the swing base. Opposing ends of the pivot pin are retained in the upper and lower base flange. The arm spring is retained on the pivot pin.

The swing arm includes a butt stock ring and a pivot arm. The pivot arm extends from the stock ring. A pivot hole is formed through a distal end of the pivot arm. The pivot hole is sized to receive the pivot pin. A threaded bore is formed in the stock ring to threadably receive the butt stock threaded tube. The shortened buffer tube includes a first externally threaded end and a second externally threaded end. A tube flange is formed at an end of the first threaded end. A sleeve flange bore is formed in through the shortened buffer tube. The sleeve flange bore is sized to provide clearance for the tube flange.

The end cap includes an end cap portion and a guide rod. A threaded counterbore is formed in one end of the end cap portion. The threaded counterbore is sized to threadably receive the first externally threaded end of the shortened buffer tube. The guide rod is pressed into the end cap portion. A guide spring is placed on the guide rod. An inner perimeter of the bolt carrier sleeve is sized to receive the guide rod.

The folding stock attachment is preferably assembled in the following manner. The shortened buffer tube is inserted into the tube bore in the swing base. The second external threaded end is threaded into a lower receiver of a firearm. The bolt carrier sleeve is inserted into the shortened buffer tube and finally into the modified bolt carrier with the guide spring placed over the bolt carrier sleeve. The end cap is threaded on to the first external thread of the shortened buffer tube. One end of the butt stock threaded tube is threaded into the swing arm. The other end of the butt stock threaded tube is then threaded into a butt stock of a firearm. The swing arm is inserted into the swing base and the pivot pin inserted through the top and bottom flanges with a spring disposed below the pivot arm.

Accordingly, it is an object of the present invention to provide a folding stock attachment, which allows a stock to be folded to a right side of the firearm.

Finally, it is another object of the present invention to provide a folding stock attachment, which has a shorter length than that of the prior art.

These and additional objects, advantages, features and benefits of the present invention will become apparent from the following specification.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a top view of a folding stock attachment in accordance with the present invention.

FIG. **2** is a right side view of a folding stock attachment in accordance with the present invention.

FIG. **3** is a left side view of a folding stock attachment in accordance with the present invention.

FIG. **4** is an end view of a folding stock attachment in accordance with the present invention.

FIG. **5** is an exploded top view of a folding stock attachment in accordance with the present invention.

FIG. **6** is an exploded right side view of a folding stock attachment in accordance with the present invention.

FIG. **7** is a right side view of a folding stock attachment secured to a butt stock and a lower receiver of a firearm in accordance with the present invention.

FIG. **8** is a right side view of a folding stock attachment secured to a butt stock and a lower receiver of a firearm with the butt stock folded relative to the lower receiver in accordance with the present invention.

FIG. **9** is a top view of a folding stock attachment secured to a butt stock and a lower receiver of a firearm with the butt stock folded relative to the lower receiver in accordance with the present invention.

FIG. **10** is an end view of a folding stock attachment secured to a butt stock and a lower receiver of a firearm with the butt stock folded relative to the lower receiver in accordance with the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference now to the drawings, and particularly to FIG. **1**, there is shown a top view of a folding stock attachment **1**. With reference to FIGS. **2-6**, the folding stock attachment preferably includes a modified bolt carrier **10**, a folding stock member **12**, a shortened buffer tube **14**, an end cap **16**, a butt stock threaded tube **18** and a bolt carrier sleeve **20**. The

modified bolt carrier **10** includes a bolt end **22** and a buffer end **24**. A sleeve bore **26** is formed in the buffer end **24** of the modified carrier bolt **10** to receive the bolt carrier sleeve **20**. It is preferable to shorten the buffer end **24** by about 0.5-1 inch, before forming the sleeve bore **26**. A sleeve spring **30** is placed on the bolt carrier sleeve **20**. A sleeve flange **32** is formed on an end of the bolt carrier sleeve **20** to retain the sleeve spring **30**. The folding stock member **12** includes a swing base **34**, a swing arm **36**, a pivot pin **38** and an arm spring **40**. A tube bore **42** is formed through the swing base **34** to receive the shortened buffer tube **14**. A lower base flange **44** extends outward from a bottom of the swing base **34** and an upper base flange **46** extends outward from a top of the swing base **34**. Ends of the pivot pin **38** are retained in the lower and upper base flanges **44**, **46**. The arm spring **40** is retained on the pivot pin **38**.

The swing arm **36** includes a butt stock ring **48** and a pivot arm **50**. The pivot arm **50** extends from an outer perimeter of the stock ring **48**. A pivot hole **52** is formed through a distal end of the pivot arm **50**. The pivot hole **52** is sized to receive the pivot pin **38**. With reference to FIG. **10**, a notch **55** is formed in a sidewall of the swing base **34**, adjacent the pivot pin **38** to hold the swing arm **36**, such that a butt stock **102** of a firearm **100** is retained in a folded position. A threaded bore **54** is formed in the stock ring **48** to threadably receive the butt stock threaded tube **18**. The shortened buffer tube **14** includes a first externally threaded end **56** and a second externally threaded end **58**. A tube flange **60** is formed on an end of the first threaded end **56**. A tightening through hole **62** is formed through the first externally threaded end **56** to receive a tightening rod (not shown) to allow the second externally threaded end **58** to tightened into a lower receiver **104**.

With reference to FIG. **7**, the tightening rod is rotated to tighten the second externally threaded end **58** into a lower receiver **104** of the firearm **100**. A sleeve flange bore is formed through the shortened buffer tube **14**. The sleeve flange bore is sized to provide clearance for the tube flange **60**. The end cap **16** includes an end cap portion **64** and a guide rod **66**. A threaded counterbore is formed in one end of the end cap portion **64**. The threaded counterbore is sized to threadably receive the first externally threaded end **56** of the shortened buffer tube **14**. The guide rod **66** is pressed into the end cap portion **64**. A guide spring **68** is placed on the guide rod **66**. An inner perimeter of the bolt carrier sleeve **20** is sized to receive the guide rod **66**.

The folding stock attachment **1** is preferably assembled in the following manner. The shortened buffer tube **14** is inserted into the tube bore **42** in the swing base **34**. The second external threaded end **58** is threaded into the lower receiver **104** of the firearm **100**. A non-rotation projection **35** preferably extends from the swing base **34** to engage an alignment hole in the lower receiver **104**. The bolt carrier sleeve **20** is inserted into shortened buffer tube **14** and finally into the modified bolt carrier **10** with the sleeve spring **30** placed over the bolt carrier sleeve **20**. The end cap **16** is threaded on to the first external thread **56** of the shortened buffer tube **14**. One end of the butt stock threaded tube **18** is threaded into the swing arm **36**. The other end of the butt stock threaded tube **18** is then threaded into the butt stock **102** of the firearm **100**. The swing arm **36** is inserted into the swing base **38** and the pivot pin **38** is inserted through the top and bottom flanges **44**, **46** with the spring **40** disposed below the pivot arm **50**.

While particular embodiments of the invention have been shown and described, it will be obvious to those skilled in the art that changes and modifications may be made without departing from the invention in its broader aspects, and therefore, the aim in the appended claims is to cover all such changes and modifications as fall within the true spirit and scope of the invention.

I claim:

1. A folding stock attachment with modified bolt carrier for automatic recoil rifles and pistols comprising:

a bolt carrier sleeve;

a modified bolt carrier having a sleeve bore formed in one end thereof, said sleeve bore is sized to receive said bolt carrier sleeve;

a buffer tube having a first threaded end and a second threaded end;

a folding stock member includes a swing base and a swing arm, said swing arm is pivotally engaged with said swing base, a tube bore is formed through said swing base to receive said buffer tube;

an end cap includes an end cap portion and a guide rod, said guide rod extends from said end cap portion, said bolt carrier sleeve is sized to receive said guide rod, said first threaded end is threaded into said end cap; and

a butt stock threaded tube having one end threaded into said swing arm, wherein the other end of said butt stock threaded tube is threaded into a butt stock of a firearm, said second threaded end is threaded into a lower receiver of the firearm.

2. The folding stock attachment with modified bolt carrier for automatic recoil rifles and pistols of claim **1**, further comprising:

upper and lower flanges extend from a top and bottom of said swing base, a pivot pin is retained in said upper and lower flanges, said pivot pin pivotally retains said swing arm relative to said swing base.

3. The folding stock attachment with modified bolt carrier for automatic recoil rifles and pistols of claim **2**, further comprising:

an arm spring is retained on said pivot pin, said arm spring is located below said upper flange on said pivot pin.

4. The folding stock attachment with modified bolt carrier for automatic recoil rifles and pistols of claim **1**, further comprising:

a guide spring is placed on said guide rod.

5. The folding stock attachment with modified bolt carrier for automatic recoil rifles and pistols of claim **1**, further comprising:

a sleeve spring is placed on said bolt carrier sleeve.

6. The folding stock attachment with modified bolt carrier for automatic recoil rifles and pistols of claim **1** wherein:

a notch is formed in a side of said swing base to vertically restrain said swing arm.

7. The folding stock attachment with modified bolt carrier for automatic recoil rifles and pistols of claim **1** wherein:

a length of said modified bolt carrier is shortened by at least 0.5 inches relative to an unmodified bolt carrier that is compatible with said automatic rifles and pistols.

8. The folding stock attachment with modified bolt carrier for automatic recoil rifles and pistols of claim **5** wherein:

a sleeve flange is formed on an end of said bolt carrier sleeve to retain said sleeve spring.

9. The folding stock attachment with modified bolt carrier for automatic recoil rifles and pistols of claim **1** wherein:

a tube flange is formed on an end of said first threaded end.

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